

# TSCOM - Linux Touchscreen Driver Version 2.0.1

The TSCOM for Linux SetupPack Version 2.0.1 required the X Window System using XOrg version 6.4.x / XFree86 version 4.1 or later. If you using a early version, we recomand that you update the X Window System before install The TSCOM for Linux SetupPack.

## File List of SetupPack

The following files are included in the TSCOM for Linux SetupPack:

tscom_setup	<i>Setup Wizard program file for quick Installation</i>
tscom-2.0.1-common.tar.gz	<i>Program and/or data files for all of the X Window Version</i>
tscom-2.0.1-driver-410.tar.gz	<i>Driver files for XOrg version 6.4.x / XFree86 version 4.1</i>
tscom-2.0.1-driver-420.tar.gz	<i>Driver files for XOrg version 6.5.x / XFree86 version 4.2</i>
tscom-2.0.1-driver-421.tar.gz	<i>Driver files for XOrg version 6.5.x / XFree86 version 4.2.1</i>
tscom-2.0.1-driver-430.tar.gz	<i>Driver files for XOrg version 6.6.x / XFree86 version 4.3.x</i>
tscom-2.0.1-driver-440.tar.gz	<i>Driver files for XOrg version 6.7.x / XFree86 version 4.4.x</i>
tscom-2.0.1-driver-450.tar.gz	<i>Driver files for XOrg version 6.8.x / XFree86 version 4.5.x</i>
tscom-2.0.1-readme.pdf	<i>Installation document (same as this file)</i>

## Installation – using Setup Wizard

The Setup Wizard program assist you to complete the install in a few Click, the followings describe how it to do that:

1. Removing previous installed version.
2. Installing the Common Package (tscom-2.0.1-common.tar.gz).
3. Installing the Driver Package (tscom-2.0.1-driver-xxx.tar.gz) correspond with the X Window System Version that you using.
4. Detecting the X Config File location in your system, and modify it to configurate the X Window System to use the TSCOM Touchscreen.

The followings describe how to quick install using the the Setup Wizard program:

1. Login as root.
2. Run the “tscom\_setup” program.
3. Following the instructions on the Setup window to complete the install.
4. Reboot your computer after the Setup is done.

## Installation – manually (for expert)

We recomand that you using the Setup Wizard to complete the install, refer to “Installation – using Setup Wizard” section for detail.

The followings describe how to complete the install manully:

1. **Login as root.**
2. **Checking the X Window System Version.**

To get the X Window System Version by running the following:

```
X -version
```

Write down the X Window System Version that you using, it's required when installing the Driver Package later.

### 3. Removing the Previous Installed Version.

remove the previous installed directory and files by running the followings:

```
rm -vfr /etc/TSCOM
rm -vf /usr/X11R6/lib/modules/input/tscom_drv.o
rm -vf /usr/X11R6/lib/modules/input/tscomxp_drv.o
```

### 4. Creating the Install Directory.

Make a new directory named "TSCOM" in the "/etc" directory and set correspond access permissions to it, we recommend that you set permissions mode 0755 to the Install Directory.

Create Install Directory by running the following:

```
mkdir -m 0755 /etc/TSCOM
```

### 5. Installing Common Package.

The Common Package is a file named "tscom-2.0.1-common.tar.gz", it's required to install for all X Window System version.

Extra the the Common Package file by running the followings (replace the **sourcePath** to the path of the Common Package file):

```
cd /etc/TSCOM
gzip -d < sourcePath/tscom-2.0.1-common.tar.gz | tar vxf -
```

### 6. Installing Driver Package.

The Driver Package is all of file named "tscom-2.0.1-driver-**xxx**.tar.gz", where **xxx** indicates that it supported what X Window System Version. Refer to the following table to choose a Driver Package Filename correspond with the X Window System Version that you using:

<i>Using X Window System</i>	<i>Driver Package Filename</i>
XOrg Version 6.4.x / XFree86 Version 4.1	tscom-2.0.1-driver-410.tar.gz
XOrg Version 6.5.x / XFree86 Version 4.2	tscom-2.0.1-driver-420.tar.gz
XOrg Version 6.5.x / XFree86 Version 4.2.1	tscom-2.0.1-driver-421.tar.gz
XOrg Version 6.6.x / XFree86 Version 4.3.x	tscom-2.0.1-driver-430.tar.gz
XOrg Version 6.7.x / XFree86 Version 4.4.x	tscom-2.0.1-driver-440.tar.gz
XOrg Version 6.8.x / XFree86 Version 4.5.x	tscom-2.0.1-driver-450.tar.gz

Extra the the Driver Package file by running the followings (replace the **sourcePath** to the path of the Driver Package file, and replace the **xxx** to set the filename to the Driver Package Filename that you want to install):

```
cd /etc/TSCOM
```

```
gzip -d < sourcePath/tscom-2.0.1-driver-xxx.tar.gz | tar vxf -
```

## 7. Setting Correspond Access Permissions to Installed Files.

We recommend that you set correspond access permissions to each file in the Install Directory, Set permissions to each file in the Install Directory by running followings:

```
cd /etc/TSCOM
chmod 0444 tscom_drv.o
chmod 0444 tscomxp_drv.o
chmod 0666 tscom-config
chmod 0755 tscom_calibrate
chmod 0666 tscom_calibrate.log
chmod 0755 tscom_rightbutton
chmod 0666 tscom_rightbutton.log
```

## 8. Installing the TSCOM XInput Device Drivers.

For loading the TSCOM XInput Device Drivers when the X Window System booting, All of TSCOM drivers must present in the XInput Drivers Directory ("/usr/X11R6/lib/modules/input"), you can use "Copy File" or "Create Symbolic File" command to install TSCOM drivers, from the Install Directory to the XInput Drivers Directory.

We recommend that you Install TSCOM drivers by running the followings:

```
cd /usr/X11R6/lib/modules/input
ln -s /etc/TSCOM/tscom_drv.o tscom_drv.o
ln -s /etc/TSCOM/tscomxp_drv.o tscomxp_drv.o
```

## 9. Configuring the X Window System.

In order to use TSCOM Touchscreen with the X Window System, you need to configurate the X Window System by editing the X Config File, the followings describe how to do that.

- Opening the X Config File.

Use any text editor to open the X Config File in edit mode. The path and filename of the X Config File is depended on the Linux Distribution that you using, locate to the "/var/log" directory, open the file named "XFree86.0.log" or "Xorg.0.log", search in the file with "Using config file:" string, the path and filename of the X Config File shows following the string.

- Add two InputDevice Section.

```
Section "InputDevice"
    Identifier "TSCOM_Touchscreen"
    Driver      "tscom"
    Option      "Device"          "/dev/ttyS0"
    Option      "DeviceModel"     "TS"
    Option      "ScreenNo"        "0"
    Option      "SendCoreEvents"  "yes"
EndSection
```

```
Section "InputDevice"
    Identifier "TSCOM_Calibration"
    Driver     "tscomxp"
EndSection
```

**Note:**

- (1) *The instructions above are case-sensitive.*
- (2) *The instructions above are for a touchscreen connected to COM1, the Option "Device" specifies the COM port the touchscreen is connected to. The following describe how to use:  
Use Option "Device" "/dev/ttyS0" for COM1.  
Use Option "Device" "/dev/ttyS1" for COM2.  
Use Option "Device" "/dev/ttyS2" for COM3.  
Use Option "Device" "/dev/ttyS3" for COM4.*

- Add two InputDevice lines to the ServerLayout Section.

```
Section "ServerLayout"
    InputDevice "TSCOM_Touchscreen" "SendCoreEvents"
    InputDevice "TSCOM_Calibration"
EndSection
```

**Note:**

- (1) *The instructions above are case-sensitive.*
- (2) *If no pointer device configed to "CorePointer", you can change the "SendCoreEvents" to "CorePointer" in the InputDevice "TSCOM\_Touchscreen" line.*

- Save changes to the X Config File.

## 10. Restarting the X Window System.

After you complete the install, you must reboot your computer or restart the X Server for the new settings to take effect, and make the TSCOM Touchscreen start to working.

## Calibration

To calibrate the touchscreen, run the "tscom\_calibrate" program in the "/etc/TSCOM" directory, following the instructions show on the screen to complete the calibrate.

**Note:**

*The user who runs the Calibration program must have permissions to access (read/write) the "tscom-config" file and the "tscom\_calibrate.log" file in the "/etc/TSCOM" directory.*

The Calibration program read the "CalibrationMode" setting from the "/etc/TSCOM/tscom-config" file at start, if the setting is set to 1, it running in 4 Points Calibration Mode 2 (center of each eddge of screen), if the setting is set to 0, it running in 4 Points Calibration Mode 1 (each conner of screen).

## Right Button Function

The TSCOM Touchscreen supported two Right Button Function Mode, one is “Manual Mode”, the other is “Automatic Mode”, see the followings for detail information.

- **Manual Right Button Mode**

To enable the Manual Right Button Function, run the “tscom\_rightbutton” program in the “/etc/TSCOM” directory.

*Note:*

*The user who runs the Right Button Function program must have permissions to access (read/write) the “tscom\_rightbutton.log” file in the “/etc/TSCOM” directory.*

To disable the Manual Right Button Function, click right-button on the Title of Right Button Window, than click “Yes” button on the dialog to close the Manual Right Button Function program.

The followings describe how to using the Manual Right Button Function:

Every time you click (touch then lift-off) on the Hand-Mouse icon in the Right Button Window, the next touch will be Right Button until you Lift-off.

- **Automatic Right Button Mode**

To enable/disable the Automatic Right Button Function, edit the “tscom-config” file in the “/etc/TSCOM” directory by changing the following settings:

RightButtonAutoMode	Function control. 0=Disable, 1=Enable.
RightButtonAutoSTime	Automatic Toggle-on time. 0=0.5 second, 1=1 second, 2=1.5 second ....
RightButtonAutoETime	Automatic Toggle-off time. 0=0.5 second, 1=1 second, 2=1.5 second ....
RightButtonAutoBeep	Beep when toggle-on and toggle-off. 0=No, 1=Yes.

*Note:*

*You must reboot your computer or restart the X Server for the new settings to take effect.*

The followings describe how to using the Automatic Right Button Function:

If you touch on and hold (no move) until out of the Toggle-On time ( RightButtonAutoSTime), the Touchscreen automatic change to Right Button Mode, if you touch on and moving before out of the Toggle-On time, the Touchscreen stay in Left Button Mode until you lift-off from the Touchscreen. After the Touchscreen automatic change to Right Button Mode, when you lift-off from the

Touchscreen, if no touch found until out of the Toggle-Off time ( RightButtonAutoETime), the Touchscreen automatic change back to Left Button Mode, if you touch on again before out of the Toggle-Off time ( RightButtonAutoETime), the Touchscreen stay in Right Button Mode until you lift-off from the Touchscreen.

If the Toggle-Beep Mode (RightButtonAutoBeep) is set to 1 (Yes), the Touchscreen will beep when it automatic toggle-on/off the Right Button Mode.

## Touch Beep Function

To enable/disable the Touch Beep Function, edit the “tscom-config” file in the “/etc/TSCOM” directory by changing the following settings:

TouchBeepMode	Function control. 0=Silence ( no sound ). 1=Beep when lift-off. 2=Beep when touch-down. 3=Beep when touch-down or lift-off.
TouchBeepTone	Beep sound frequency. The PC mainboard timer 8254 is clocked at 1.19 MHz and so the tone is 1190000/frequency,
TouchBeepVolume	Beep volume control.
TouchBeepDuration	Beep duration control.

### *Note:*

*You must reboot your computer or restart the X Server for the new settings to take effect.*